

SEQUENCE LISTING

<110> Bristol-Myers Suibb Company

<120> Novel Drosophila Tumor Necrosis Factor Class Molecule ("DmTNF") and Variants Thereof

<130> D0016.np

<150> 60/190,816

<151> 2000-03-21

<160> 65

<170> PatentIn version 3.0

<210> 1

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<212> DNA

<213> Drosophila melanogaster

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<222> (652)..(1878)

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gtaatacaat ctgaaaaggg caccatcagc agccccgaggg gtttatctat atagatgtcg 420

cagcttatca tctcatgctg tctgtgaggt tggtctgtgt gtcgtgttag tatcttaaata 480

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atcagcatct ggaggccccg gatgctctaa gatccccagt gttcatcaat t atg act 657

Met Thr

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Ala Glu Thr Leu Lys Pro Phe Ile Thr Pro Thr Ser Ala Asn Asp Asp

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ggg ttt ccg gcc aaa gcg acc agc acg gcg acc gcc cag cga cgc acc 753

Gly Phe Pro Ala Lys Ala Thr Ser Thr Ala Thr Ala Gln Arg Arg Thr

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Arg Gln Leu Ile Pro Leu Val Leu Gly Phe Ile Gly Leu Gly Leu Val	
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Val Ala Ile Leu Ala Leu Thr Ile Trp Gln Thr Thr Arg Val Ser His	
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Gln Arg Leu Gly Ile Asn Tyr Leu Asp Glu Phe Asp Glu Phe Gln Lys	
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gag tac gag aat gcc ctc atc gac tat cca aaa aag gtg gat ggc ctc	993
Glu Tyr Glu Asn Ala Leu Ile Asp Tyr Pro Lys Lys Val Asp Gly Leu	
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Glu Thr Asp Ser Ala Ser Ser Ala Ser Asn Asp Asp Asn Val Phe Asp	
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gac ttt acc agc tca gat gcc ctc aaa aag aag cag gag aga aaa tct	1281
Asp Phe Thr Ser Ser Asp Ala Leu Lys Lys Lys Gln Glu Arg Lys Ser	
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Arg Ser Ile Ala Asp Val Arg Asn Glu Glu Gln Asn Ile Gln Gly Asn	
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cac aca gag ctt cag gaa aag tca tcc aat gag gca gct tcc aaa gag	1377
His Thr Glu Leu Gln Glu Lys Ser Ser Asn Glu Ala Ala Ser Lys Glu	
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agc cct gca gca ctt cac ctc cgt cgc aga atg cat tcc cgc cat cgc	1425
Ser Pro Ala Ala Leu His Leu Arg Arg Arg Met His Ser Arg His Arg	
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cac ctc gta gtc cgc aaa gcc aga tcc gag gac tcg agg cca gca gcc	1473
His Leu Val Val Arg Lys Ala Arg Ser Glu Asp Ser Arg Pro Ala Ala	
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His Phe His Leu Ser Ser Arg Arg Arg His Gln Glu Ser Met Gly Tyr	
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His Gly Asp Met Tyr Ile Glu Asn Asp Arg Glu Arg Cys Ser Tyr Gln	
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gga cac ttt caa acg cgc gat ggc gta ttg acg gtg acc aat gca ggc	1617
Gly His Phe Gln Thr Arg Asp Gly Val Leu Thr Val Thr Asn Ala Gly	
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cta tat tac gta tac gcc cag ata tgg ggc tac aac tcg cac gac cag	1665
Leu Tyr Tyr Val Tyr Ala Gln Ile Trp Gly Tyr Asn Ser His Asp Gln	
325 330 335	
aac gga ttt atc gtc ttt caa gga gac act cca ttc ctg cag tgc ttg	1713
Asn Gly Phe Ile Val Phe Gln Gly Asp Thr Pro Phe Leu Gln Cys Leu	
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aac acg gtg ccc acc aac atg cca cat aag gtg cac acc tgc cac acg	1761
Asn Thr Val Pro Thr Asn Met Pro His Lys Val His Thr Cys His Thr	
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Ser Gly Leu Ile His Leu Glu Arg Asn Glu Arg Ile His Leu Lys Asp	
375 380 385	
att cac aac gat cgc aat gca gtt ctg cgg gag gga aac aac cga agc	1857
Ile His Asn Asp Arg Asn Ala Val Leu Arg Glu Gly Asn Asn Arg Ser	
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Tyr Phe Gly Ile Phe Lys Val	
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Ser His Leu Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn
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Leu Gln Gln Arg Leu Gly Ile Asn Tyr Leu Asp Glu Phe Asp Glu Phe
 85 90 95

Gln Lys Glu Tyr Glu Asn Ala Leu Ile Asp Tyr Pro Lys Lys Val Asp
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Gly Leu Thr Asp Glu Glu Asp Asp Asp Asp Gly Asp Gly Leu Asp Ser
 115 120 125

Ile Ala Asp Asp Glu Asp Asp Asp Val Ser Tyr Ser Ser Val Asp Asp
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Val Gly Ala Asp Tyr Glu Asp Tyr Thr Asp Met Leu Asn Lys Leu Asn
 145 150 155 160

Asn Ala His Thr Gly Thr Thr Pro Thr Ser Glu Thr Thr Ala Glu Gly
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Glu Gly Glu Thr Asp Ser Ala Ser Ser Ala Ser Asn Asp Asp Asn Val
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Phe Asp Asp Phe Thr Ser Ser Asp Ala Leu Lys Lys Lys Gln Glu Arg
 195 200 205

Lys Ser Arg Ser Ile Ala Asp Val Arg Asn Glu Glu Gln Asn Ile Gln
 210 215 220

Gly Asn His Thr Glu Leu Gln Glu Lys Ser Ser Asn Glu Ala Ala Ser
 225 230 235 240

Lys Glu Ser Pro Ala Ala Leu His Leu Arg Arg Arg Met His Ser Arg
 245 250 255

His Arg His Leu Val Val Arg Lys Ala Arg Ser Glu Asp Ser Arg Pro
 260 265 270

Ala Ala His Phe His Leu Ser Ser Arg Arg Arg His Gln Glu Ser Met
 275 280 285

Gly Tyr His Gly Asp Met Tyr Ile Glu Asn Asp Arg Glu Arg Cys Ser
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Tyr Gln Gly His Phe Gln Thr Arg Asp Gly Val Leu Thr Val Thr Asn
 305 310 315 320

Ala Gly Leu Tyr Tyr Val Tyr Ala Gln Ile Trp Gly Tyr Asn Ser His
 325 330 335

Asp Gln Asn Gly Phe Ile Val Phe Gln Gly Asp Thr Pro Phe Leu Gln
 340 345 350

Cys Leu Asn Thr Val Pro Thr Asn Met Pro His Lys Val His Thr Cys
 355 360 365

His Thr Ser Gly Leu Ile His Leu Glu Arg Asn Glu Arg Ile His Leu
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Arg Ser Tyr Phe Gly Ile Phe Lys Val
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Asp Asp Gly Phe Pro Ala Lys Ala Thr Ser Thr Ala Thr Ala Gln Arg	
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cgc acc cgc cag ctg atc ccc ctg gtt ttg ggg ttc atc ggt ctg ggg	144
Arg Thr Arg Gln Leu Ile Pro Leu Val Leu Gly Phe Ile Gly Leu Gly	
35 40 45	
ctg gtc gtt gcc att ctc gca cta acg atc tgg cag aca acg cgt gta	192
Leu Val Val Ala Ile Leu Ala Leu Thr Ile Trp Gln Thr Thr Arg Val	
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tcg cat ctg gac aag gag ctg aag agc ctg aag cga gtc gtc gat aat	240
Ser His Leu Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn	
65 70 75 80	
ctc cag cag cgt ttg ggc ata aac tat ctg gac gag ttc gac gag ttc	288
Leu Gln Gln Arg Leu Gly Ile Asn Tyr Leu Asp Glu Phe Asp Glu Phe	
85 90 95	
caa aag gag tac gag aat gcc ctc atc gac tat cca aaa aag gtg gat	336
Gln Lys Glu Tyr Glu Asn Ala Leu Ile Asp Tyr Pro Lys Lys Val Asp	
100 105 110	
ggc ctc acg gat gag gag gac gac gac gat ggc gat ggt ctg gat tcc	384
Gly Leu Thr Asp Glu Glu Asp Asp Asp Asp Gly Asp Gly Leu Asp Ser	
115 120 125	
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Ile Ala Asp Asp Glu Asp Asp Asp Val Ser Tyr Ser Ser Val Asp Asp	
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Val Gly Ala Asp Tyr Glu Asp Tyr Thr Asp Met Leu Asn Lys Leu Asn	
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Asn Ala His Thr Gly Thr Thr Pro Thr Ser Glu Thr Thr Ala Glu Gly	
165 170 175	
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Glu Gly Glu Thr Asp Ser Ala Ser Ser Ala Ser Asn Asp Asp Asn Val	
180 185 190	
ttc gat gac ttt acc agc tac aat gcc cac aaa aag aag cag gag aga	624
Phe Asp Asp Phe Thr Ser Tyr Asn Ala His Lys Lys Lys Gln Glu Arg	
195 200 205	
aaa tct cgc tcg att gcc gat gta cgc aat gag gag cag aat att caa	672
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210 215 220	

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Ser His Leu Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn	65	70	75
Leu Gln Gln Arg Leu Gly Ile Asn Tyr Leu Asp Glu Phe Asp Glu Phe	85	90	95
Gln Lys Glu Tyr Glu Asn Ala Leu Ile Asp Tyr Pro Lys Lys Val Asp	100	105	110
Gly Leu Thr Asp Glu Glu Asp Asp Asp Asp Gly Asp Gly Leu Asp Ser	115	120	125
Ile Ala Asp Asp Glu Asp Asp Asp Val Ser Tyr Ser Ser Val Asp Asp	130	135	140
Val Gly Ala Asp Tyr Glu Asp Tyr Thr Asp Met Leu Asn Lys Leu Asn	145	150	155
Asn Ala His Thr Gly Thr Thr Pro Thr Ser Glu Thr Thr Ala Glu Gly	165	170	175
Glu Gly Glu Thr Asp Ser Ala Ser Ser Ala Ser Asn Asp Asp Asn Val	180	185	190
Phe Asp Asp Phe Thr Ser Tyr Asn Ala His Lys Lys Lys Gln Glu Arg	195	200	205
Lys Ser Arg Ser Ile Ala Asp Val Arg Asn Glu Glu Gln Asn Ile Gln	210	215	220
Gly Asn His Thr Glu Leu Gln Glu Lys Ser Ser Asn Glu Ala Thr Ser	225	230	235
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Lys Glu Arg Met His Ser Arg His Arg His Leu Leu Val Arg Lys Gly
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Glu Ser Leu Leu Ser Ala Arg Ser Glu Asp Ser Arg Pro Ala Ala His
 260 265 270

Phe His Leu Ser Ser Arg Arg Arg His Gln Gly Ser Met Gly Tyr His
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Gly Asp Met Tyr Ile Gly Asn Asp Asn Glu Arg Asn Ser Tyr Gln Gly
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His Phe Gln Thr Arg Asp Gly Val Leu Thr Val Thr Asn Thr Gly Leu
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Tyr Tyr Val Tyr Ala Gln Ile Cys Tyr Asn Asn Ser His Asp Gln Asn
 325 330 335

Gly Phe Ile Val Phe Gln Gly Asp Thr Pro Phe Leu Gln Cys Leu Asn
 340 345 350

Thr Val Pro Thr Asn Met Pro His Lys Val His Thr Cys His Thr Ser
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Gly Leu Ile His Leu Glu Arg Asn Glu Arg Ile His Leu Lys Asp Ile
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ccg ttt ata acg cca acg agt gcc aac gat gat ggt ttt ccg gcc aaa	702
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gcg acc agc acg gcg acc gcc cag cga cgc acc cgc cag ctg atc ccc	750
Ala Thr Ser Thr Ala Thr Ala Gln Arg Arg Thr Arg Gln Leu Ile Pro	
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Leu Val Leu Gly Phe Ile Gly Leu Gly Leu Val Val Ala Ile Leu Ala	
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Leu Thr Ile Trp Gln Thr Thr Arg Val Ser His Leu Asp Lys Glu Leu	
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Lys Ser Leu Lys Arg Val Val Asp Asn Leu Gln Gln Arg Leu Gly Ile	
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Asn Tyr Leu Asp Glu Phe Asp Glu Phe Gln Lys Glu Tyr Glu Asn Ala	
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ctc atc gac tat cca aaa aag gtg gat ggc ctc acg gat gag gag gac	990
Leu Ile Asp Tyr Pro Lys Lys Val Asp Gly Leu Thr Asp Glu Glu Asp	
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Asp Asp Asp Gly Asp Gly Leu Asp Ser Ile Ala Asp Asp Glu Asp Asp	
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Asp Val Ser Tyr Ser Ser Val Asp Asp Val Gly Ala Asp Tyr Glu Asp	

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	tcc tca gcc tca aat gat gac aat gtg ttc gat gac ttt acc agc tac			1230
	Ser Ser Ala Ser Asn Asp Asp Asn Val Phe Asp Asp Phe Thr Ser Tyr			
	185	190	195	
	aat gcc cac aaa aag aag cag gag aga aaa tct cgc tcg att gcc gat			1278
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	gta cgc aat gag gag cag aat att caa gga aat cac aca gag ctt cag			1326
	Val Arg Asn Glu Glu Gln Asn Ile Gln Gly Asn His Thr Glu Leu Gln			
	220	225	230	
	gaa aag tca tcc aat gag gca act tcc aaa gag agc cct gca cca ctt			1374
	Glu Lys Ser Ser Asn Glu Ala Thr Ser Lys Glu Ser Pro Ala Pro Leu			
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	His His Arg Arg Arg Met His Ser Arg His Arg His Leu Leu Val Arg			
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	Lys Ala Arg Ser Glu Asp Ser Arg Pro Ala Ala His Phe His Leu Ser			
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	agc agg cgg cgt cac caa gga agt atg ggc tac cat gga gat atg tac			1518
	Ser Arg Arg Arg His Gln Gly Ser Met Gly Tyr His Gly Asp Met Tyr			
	280	285	290	295
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	Arg Asp Gly Val Leu Thr Val Thr Asn Thr Gly Leu Tyr Tyr Val Tyr			
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	gcc cag ata tgc tac aac aac tcg cac gac cag aac gga ttt atc gtc			1662
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	Asn Met Pro His Lys Val His Thr Cys His Thr Ser Gly Leu Ile His			
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Asn Ala Val Leu Arg Glu Gly Asn Asn Arg Ser Tyr Phe Gly Ile Phe	
395 400 405	
aag gtg taaattggag agattatccc cggtcagaag atggaatacc agtttaagct	1910
Lys Val	
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Leu Gln Gln Arg Leu Gly Ile Asn Tyr Leu Asp Glu Phe Asp Glu Phe	
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Glu Gly Glu Thr Asp Ser Ala Ser Ser Ala Ser Asn Asp Asp Asn Val
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Phe Asp Asp Phe Thr Ser Tyr Asn Ala His Lys Lys Lys Gln Glu Arg
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Lys Ser Arg Ser Ile Ala Asp Val Arg Asn Glu Glu Gln Asn Ile Gln
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Gly Asn His Thr Glu Leu Gln Glu Lys Ser Ser Asn Glu Ala Thr Ser
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Lys Glu Ser Pro Ala Pro Leu His His Arg Arg Arg Met His Ser Arg
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His Arg His Leu Leu Val Arg Lys Ala Arg Ser Glu Asp Ser Arg Pro
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Ala Ala His Phe His Leu Ser Ser Arg Arg Arg His Gln Gly Ser Met
 275 280 285

Gly Tyr His Gly Asp Met Tyr Ile Gly Asn Asp Asn Glu Arg Asn Ser
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Thr Gly Leu Tyr Tyr Val Tyr Ala Gln Ile Cys Tyr Asn Asn Ser His
 325 330 335

Asp Gln Asn Gly Phe Ile Val Phe Gln Gly Asp Thr Pro Phe Leu Gln

340

345

350

Cys Leu Asn Thr Val Pro Thr Asn Met Pro His Lys Val His Thr Cys
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His Thr Ser Gly Leu Ile His Leu Glu Arg Asn Glu Arg Ile His Leu
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<213> Drosophila melanogaster

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Phe Val Ala Leu Leu Gly Leu Gly Leu Gly Gln Val Val Cys Ser Val
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Ala Leu Phe Phe Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser
 65 70 75 80

Glu Asp Gly Thr His Cys Ile Tyr Arg Ile Leu Arg Leu His Glu Asn
 85 90 95

Ala Asp Phe Gln Asp Thr Thr Leu Glu Ser Gln Asp Thr Lys Leu Ile
 100 105 110

Pro Asp Ser Cys Arg Arg Ile Lys Gln Ala Phe Gln Gly Ala Val Gln
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Gln Gln Pro Leu Glu Pro Gly Glu Ala Ala Leu His Ser Asp Ser Gln
 115 120 125

Asp Gly His Gln Met Ala Leu Leu Asn Phe Phe Phe Pro Asp Glu Lys
 130 135 140

Pro Tyr Ser Glu Glu Glu Ser Arg Arg Val Arg Arg Asn Lys Arg Ser
 145 150 155 160

Lys Ser Asn Glu Gly Ala Asp Gly Pro Val Lys Asn Lys Lys Lys Gly
 165 170 175

Lys Lys Ala Gly Pro Pro Gly Pro Asn Gly Pro Pro Gly Pro Pro Gly
 180 185 190

Pro Pro Gly Pro Gln Gly Pro Pro Gly Ile Pro Gly Ile Pro Gly Ile
 195 200 205

Pro Gly Thr Thr Val Met Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly
 210 215 220

Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala Asp Lys
 225 230 235 240

Ala Gly Thr Arg Glu Asn Gln Pro Ala Val Val His Leu Gln Gly Gln
 245 250 255

Gly Ser Ala Ile Gln Val Lys Asn Asp Leu Ser Gly Gly Val Leu Asn
 260 265 270

Asp Trp Ser Arg Ile Thr Met Asn Pro Lys Val Phe Lys Leu His Pro
 275 280 285

Arg Ser Gly Glu Leu Glu Val Leu Val Asp Gly Thr Tyr Phe Ile Tyr
 290 295 300

Ser Gln Val Glu Val Tyr Tyr Ile Asn Phe Thr Asp Phe Ala Ser Tyr
 305 310 315 320

Glu Val Val Val Asp Glu Lys Pro Phe Leu Gln Cys Thr Arg Ser Ile
 325 330 335

Glu Thr Gly Lys Thr Asn Tyr Asn Thr Cys Tyr Thr Ala Gly Val Cys
 340 345 350

Leu Leu Lys Ala Arg Gln Lys Ile Ala Val Lys Met Val His Ala Asp
 355 360 365

Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala Ile Arg
 370 375 380

Leu Gly Glu Ala Pro Ala Ser
 385 390

<210> 9
 <211> 391
 <212> PRT

<213> Mus musculus

<400> 9

Met Gly Tyr Pro Glu Val Glu Arg Arg Glu Pro Leu Pro Ala Ala Ala
1 5 10 15
Pro Arg Glu Arg Gly Ser Gln Gly Cys Gly Cys Arg Gly Ala Pro Ala
20 25 30
Arg Ala Gly Glu Gly Asn Ser Cys Arg Leu Phe Leu Gly Phe Phe Gly
35 40 45
Leu Ser Leu Ala Leu His Leu Leu Thr Leu Cys Cys Tyr Leu Glu Leu
50 55 60
Arg Ser Glu Leu Arg Arg Glu Arg Gly Thr Glu Ser Arg Leu Gly Gly
65 70 75 80
Pro Gly Ala Pro Gly Thr Ser Gly Thr Leu Ser Ser Pro Gly Ser Leu
85 90 95
Asp Pro Val Gly Pro Ile Thr Arg His Leu Gly Gln Pro Ser Phe Gln
100 105 110
Gln Gln Pro Leu Glu Pro Gly Glu Asp Pro Leu Pro Pro Asp Ser Gln
115 120 125
Asp Arg His Gln Met Ala Leu Leu Asn Phe Phe Phe Pro Asp Glu Lys
130 135 140
Ala Tyr Ser Glu Glu Glu Ser Arg Arg Val Arg Arg Asn Lys Arg Ser
145 150 155 160
Lys Ser Gly Glu Gly Ala Asp Gly Pro Val Lys Asn Lys Lys Lys Gly
165 170 175
Lys Lys Ala Gly Pro Pro Gly Pro Asn Gly Pro Pro Gly Pro Pro Gly
180 185 190
Pro Pro Gly Pro Gln Gly Pro Pro Gly Ile Pro Gly Ile Pro Gly Ile
195 200 205
Pro Gly Thr Thr Val Met Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly
210 215 220
Pro Gln Gly Pro Pro Gly Leu Gln Gly Pro Ser Gly Ala Ala Asp Lys
225 230 235 240
Thr Gly Thr Arg Glu Asn Gln Pro Ala Val Val His Leu Gln Gly Gln
245 250 255
Gly Ser Ala Ile Gln Val Lys Asn Asp Leu Ser Gly Gly Val Leu Asn
260 265 270
Asp Trp Ser Arg Ile Thr Met Asn Pro Lys Val Phe Lys Leu His Pro
275 280 285

Arg Ser Gly Glu Leu Glu Val Leu Val Asp Gly Thr Tyr Phe Ile Tyr
290 295 300

Ser Gln Val Glu Val Tyr Tyr Ile Asn Phe Thr Asp Phe Ala Ser Tyr
305 310 315 320

Glu Val Val Val Asp Glu Lys Pro Phe Leu Gln Cys Thr Arg Ser Ile
325 330 335

Glu Thr Gly Lys Thr Asn Tyr Asn Thr Cys Tyr Thr Ala Gly Val Cys
340 345 350

Leu Leu Lys Ala Arg Gln Lys Ile Ala Val Lys Met Val His Ala Asp
355 360 365

Ile Ser Ile Asn Met Ser Lys His Thr Thr Phe Phe Gly Ala Ile Arg
370 375 380

Leu Gly Glu Ala Pro Ala Ser
385 390

<210> 10
<211> 423
<212> DNA
<213> Drosophila melanogaster

<400> 10
tcgcaaaagg tcggtgctgc tgagcaataa aggtattaat ttatgaaatc attgttgcgc 60
aaagaaattg atcagaggaa tatgaaaata atcgaatcga gacggcacgt ctaaaagggtt 120
gatgtacaat attgtaacat tcagtgcata gcgacatcca gtgcagcaag taaattaagc 180
gaacaagatg gattccaaag tgggtgcaga tcctagtctg gcctacgaca aggaaatcgg 240
caacaatcta aacaacgatg attcctcatt tctgggcaac ataatccgcg aaatcctgta 300
cagtccaatg aacctggccc tcctggccat catctgcttc ctggtctata aaatcgttcg 360
ggatcgcacc gaagtgccat ccgtgggcgt tgcaaagcca tccgaacctg agttacccaa 420
aat 423

<210> 11
<211> 24
<212> DNA
<213> Drosophila melanogaster

<400> 11
accagaacgg atttatcgtc tttc 24

<210> 12
<211> 18
<212> DNA

<213> Drosophila melanogaster

<400> 12

gttggtgggc accgtgtt

18

<210> 13

<211> 19

<212> DNA

<213> Drosophila melanogaster

<400> 13

gaccatccgc ccagcatatc

19

<210> 14

<211> 19

<212> DNA

<213> Drosophila melanogaster

<400> 14

actggtggcg gatgaagtg

19

<210> 15

<211> 193

<212> PRT

<213> Drosophila melanogaster

<400> 15

Met Pro Glu Glu Gly Ser Gly Cys Ser Val Arg Arg Arg Pro Tyr Gly
1 5 10 15

Cys Val Leu Arg Ala Ala Leu Val Pro Leu Val Ala Gly Leu Val Ile
20 25 30

Cys Leu Val Val Cys Ile Gln Arg Phe Ala Gln Ala Gln Gln Gln Leu
35 40 45

Pro Leu Glu Ser Leu Gly Trp Asp Val Ala Glu Leu Gln Leu Asn His
50 55 60

Thr Gly Pro Gln Gln Asp Pro Arg Leu Tyr Trp Gln Gly Gly Pro Ala
65 70 75 80

Leu Gly Arg Ser Phe Leu His Gly Pro Glu Leu Asp Lys Gly Gln Leu
85 90 95

Arg Ile His Arg Asp Gly Ile Tyr Met Val His Ile Gln Val Thr Leu
100 105 110

Ala Ile Cys Ser Ser Thr Thr Ala Ser Arg His His Pro Thr Thr Leu
115 120 125

Ala Val Gly Ile Cys Ser Pro Ala Ser Arg Ser Ile Ser Leu Leu Arg
130 135 140

Leu Ser Phe His Gln Gly Cys Thr Ile Val Ser Gln Arg Leu Thr Pro
145 150 155 160

Leu Ala Arg Gly Asp Thr Leu Cys Thr Asn Leu Thr Gly Thr Leu Leu
165 170 175

Pro Ser Arg Asn Thr Asp Glu Thr Phe Phe Gly Val Gln Trp Val Arg
180 185 190

Pro

<210> 16

<211> 234

<212> PRT

<213> Drosophila melanogaster

<400> 16

Met Asp Pro Gly Leu Gln Gln Ala Leu Asn Gly Met Ala Pro Pro Gly
1 5 10 15

Asp Thr Ala Met His Val Pro Ala Gly Ser Val Ala Ser His Leu Gly
20 25 30

Thr Thr Ser Arg Ser Tyr Phe Tyr Leu Thr Thr Ala Thr Leu Ala Leu
35 40 45

Cys Leu Val Phe Thr Val Ala Thr Ile Met Val Leu Val Val Gln Arg
50 55 60

Thr Asp Ser Ile Pro Asn Ser Pro Asp Asn Val Pro Leu Lys Gly Gly
65 70 75 80

Asn Cys Ser Glu Asp Leu Leu Cys Ile Leu Lys Arg Ala Pro Phe Lys
85 90 95

Lys Ser Trp Ala Tyr Leu Gln Val Ala Lys His Leu Asn Lys Thr Lys
100 105 110

Leu Ser Trp Asn Lys Asp Gly Ile Leu His Gly Val Arg Tyr Gln Asp
115 120 125

Gly Asn Leu Val Ile Gln Phe Pro Gly Leu Tyr Phe Ile Ile Cys Gln
130 135 140

Leu Gln Phe Leu Val Gln Cys Pro Asn Asn Ser Val Asp Leu Lys Leu
145 150 155 160

Glu Leu Leu Ile Asn Lys His Ile Lys Lys Gln Ala Leu Val Thr Val
165 170 175

Cys Glu Ser Gly Met Gln Thr Lys His Val Tyr Gln Asn Leu Ser Gln
180 185 190

Phe Leu Leu Asp Tyr Leu Gln Val Asn Thr Thr Ile Ser Val Asn Val

195

200

205

Asp Thr Phe Gln Tyr Ile Asp Thr Ser Thr Phe Pro Leu Glu Asn Val
 210 215 220

Leu Ser Ile Phe Leu Tyr Ser Asn Ser Asp
 225 230

<210> 17

<211> 281

<212> PRT

<213> Drosophila melanogaster

<400> 17

Met Ala Met Met Glu Val Gln Gly Gly Pro Ser Leu Gly Gln Thr Cys
 1 5 10 15

Val Leu Ile Val Ile Phe Thr Val Leu Leu Gln Ser Leu Cys Val Ala
 20 25 30

Val Thr Tyr Val Tyr Phe Thr Asn Glu Leu Lys Gln Met Gln Asp Lys
 35 40 45

Tyr Ser Lys Ser Gly Ile Ala Cys Phe Leu Lys Glu Asp Asp Ser Tyr
 50 55 60

Trp Asp Pro Asn Asp Glu Glu Ser Met Asn Ser Pro Cys Trp Gln Val
 65 70 75 80

Lys Trp Gln Leu Arg Gln Leu Val Arg Lys Met Ile Leu Arg Thr Ser
 85 90 95

Glu Glu Thr Ile Ser Thr Val Gln Glu Lys Gln Gln Asn Ile Ser Pro
 100 105 110

Leu Val Arg Glu Arg Gly Pro Gln Arg Val Ala Ala His Ile Thr Gly
 115 120 125

Thr Arg Gly Arg Ser Asn Thr Leu Ser Ser Pro Asn Ser Lys Asn Glu
 130 135 140

Lys Ala Leu Gly Arg Lys Ile Asn Ser Trp Glu Ser Ser Arg Ser Gly
 145 150 155 160

His Ser Phe Leu Ser Asn Leu His Leu Arg Asn Gly Glu Leu Val Ile
 165 170 175

His Glu Lys Gly Phe Tyr Tyr Ile Tyr Ser Gln Thr Tyr Phe Arg Phe
 180 185 190

Gln Glu Glu Ile Lys Glu Asn Thr Lys Asn Asp Lys Gln Met Val Gln
 195 200 205

Tyr Ile Tyr Lys Tyr Thr Ser Tyr Pro Asp Pro Ile Leu Leu Met Lys
 210 215 220

Ser Ala Arg Asn Ser Cys Trp Ser Lys Asp Ala Glu Tyr Gly Leu Tyr
 225 230 235 240

Ser Ile Tyr Gln Gly Gly Ile Phe Glu Leu Lys Glu Asn Asp Arg Ile
 245 250 255

Phe Val Ser Val Thr Asn Glu His Leu Ile Asp Met Asp His Glu Ala
 260 265 270

Ser Phe Phe Gly Ala Phe Leu Val Gly
 275 280

<210> 18
 <211> 16
 <212> PRT
 <213> Drosophila melanogaster

<400> 18

Leu Thr Val Thr Asn Ala Gly Leu Tyr Tyr Val Tyr Ala Gln Ile Trp
 1 5 10 15

<210> 19
 <211> 17
 <212> PRT
 <213> Drosophila melanogaster

<400> 19

Leu Thr Val Thr Asn Thr Gly Leu Tyr Tyr Val Tyr Ala Gln Ile Cys
 1 5 10 15

Tyr

<210> 20
 <211> 17
 <212> PRT
 <213> Drosophila melanogaster

<400> 20

Leu Thr Val Thr Asn Thr Gly Leu Tyr Tyr Val Tyr Ala Gln Ile Cys
 1 5 10 15

Tyr

<210> 21
 <211> 36
 <212> DNA
 <213> Drosophila melanogaster

<400> 21

cggaagatc taacgcgtgt atcgcatctg gacaag

36

<210> 22
 <211> 30
 <212> DNA
 <213> Drosophila melanogaster

 <400> 22
 gcctctagaa atttacacct tgaagatgcc 30

 <210> 23
 <211> 38
 <212> DNA
 <213> Drosophila melanogaster

 <400> 23
 gcagcagcgg ccgcattctc gcactaacga tctggcag 38

 <210> 24
 <211> 35
 <212> DNA
 <213> Drosophila melanogaster

 <400> 24
 gcagcagtcg accaccttga agatgccaaa gtagc 35

 <210> 25
 <211> 38
 <212> DNA
 <213> Drosophila melanogaster

 <400> 25
 gcagcagcgg ccgcatgact gccgagaccc tcaagccg 38

 <210> 26
 <211> 36
 <212> DNA
 <213> Drosophila melanogaster

 <400> 26
 gcagcagtcg actacgccat cgcgcgtttg aaagtg 36

 <210> 27
 <211> 38
 <212> DNA
 <213> Drosophila melanogaster

 <400> 27
 gcagcagcgg ccgcattctc gcactaacga tctggcag 38

 <210> 28
 <211> 35
 <212> DNA

<213> Drosophila melanogaster

<400> 28

gcagcagtcg accaccttga agatgccaaa gtagc

35

<210> 29

<211> 38

<212> DNA

<213> Drosophila melanogaster

<400> 29

gcagcagcgg ccgcatgact gccgagaccc tcaagccg

38

<210> 30

<211> 36

<212> DNA

<213> Drosophila melanogaster

<400> 30

gcagcagtcg acgacgccat cgcgcgtttg aaagtg

36

<210> 31

<211> 38

<212> DNA

<213> Drosophila melanogaster

<400> 31

gcagcagcgg ccgcattctc gcactaacga tctggcag

38

<210> 32

<211> 35

<212> DNA

<213> Drosophila melanogaster

<400> 32

gcagcagtcg accaccttga agatgccaaa gtagc

35

<210> 33

<211> 38

<212> DNA

<213> Drosophila melanogaster

<400> 33

gcagcagcgg ccgcatgact gccgagaccc tcaagccg

38

<210> 34

<211> 37

<212> DNA

<213> Drosophila melanogaster

<400> 34

gcagcagtcg accaagacgc catcgcgct ttgaaag

37

<210> 35
<211> 14
<212> PRT
<213> Drosophila melanogaster

<400> 35

Gln Asn Ile Gln Gly Asn His Thr Glu Leu Gln Glu Lys Ser
1 5 10

<210> 36
<211> 14
<212> PRT
<213> Drosophila melanogaster

<400> 36

Leu Arg Glu Gly Asn Asn Arg Ser Tyr Phe Gly Ile Phe Lys
1 5 10

<210> 37
<211> 12
<212> PRT
<213> Drosophila melanogaster

<400> 37

Met Thr Ala Glu Thr Leu Lys Pro Phe Ile Thr Pro
1 5 10

<210> 38
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 38

Leu Thr Ile Trp Gln Thr Thr Arg Val Ser His Leu Asp
1 5 10

<210> 39
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 39

Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn
1 5 10

<210> 40
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 40

Ala His Phe His Leu Ser Ser Arg Arg Arg His Gln Glu
1 5 10

<210> 41

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 41

His Phe His Leu Ser Ser Arg Arg Arg His Gln Glu Ser
1 5 10

<210> 42

<211> 20

<212> PRT

<213> Drosophila melanogaster

<400> 42

His Leu Ser Ser Arg Arg Arg His Gln Glu Ser Met Gly Tyr His Gly
1 5 10 15

Asp Met Tyr Tyr
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<210> 43

<211> 18

<212> PRT

<213> Drosophila melanogaster

<400> 43

Leu Ser Ser Arg Arg Arg His Gln Glu Ser Met Gly Tyr His Gly Asp
1 5 10 15

Met Tyr

<210> 44

<211> 14

<212> PRT

<213> Drosophila melanogaster

<400> 44

Gln Asn Ile Gln Gly Asn His Thr Glu Leu Gln Glu Lys Ser
1 5 10

<210> 45

<211> 14

<212> PRT

<213> Drosophila melanogaster

<400> 45

Ala Gln Ile Cys Tyr Asn Asn Ser His Asp Gln Asn Gly Phe
1 5 10

<210> 46

<211> 14

<212> PRT

<213> Drosophila melanogaster

<400> 46

Leu Arg Glu Gly Asn Asn Arg Ser Tyr Phe Gly Ile Phe Lys
1 5 10

<210> 47

<211> 12

<212> PRT

<213> Drosophila melanogaster

<400> 47

Met Thr Ala Glu Thr Leu Lys Pro Phe Ile Thr Pro
1 5 10

<210> 48

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 48

Leu Thr Ile Trp Gln Thr Thr Arg Val Ser His Leu Asp
1 5 10

<210> 49

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 49

Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn
1 5 10

<210> 50

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 50

Ser Ser Asn Glu Ala Thr Ser Lys Glu Arg Met His Ser
1 5 10

<210> 51

<211> 13

<212> PRT
<213> Drosophila melanogaster

<400> 51

Gly Glu Ser Leu Leu Ser Ala Arg Ser Glu Asp Ser Arg
1 5 10

<210> 52
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 52

Ala His Phe His Leu Ser Ser Arg Arg Arg His Gln Gly
1 5 10

<210> 53
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 53

His Phe His Leu Ser Ser Arg Arg Arg His Gln Gly Ser
1 5 10

<210> 54
<211> 27
<212> PRT
<213> Drosophila melanogaster

<400> 54

Thr Arg Asp Gly Val Leu Thr Val Thr Asn Thr Gly Leu Tyr Tyr Val
1 5 10 15

Tyr Ala Gln Ile Cys Tyr Asn Asn Ser His Asp
20 25

<210> 55
<211> 14
<212> PRT
<213> Drosophila melanogaster

<400> 55

Gln Asn Ile Gln Gly Asn His Thr Glu Leu Gln Glu Lys Ser
1 5 10

<210> 56
<211> 14
<212> PRT
<213> Drosophila melanogaster

<400> 56

Ala Gln Ile Cys Tyr Asn Asn Ser His Asp Gln Asn Gly Phe
1 5 10

<210> 57
<211> 14
<212> PRT
<213> Drosophila melanogaster

<400> 57

Leu Arg Glu Gly Asn Asn Arg Ser Tyr Phe Gly Ile Phe Lys
1 5 10

<210> 58
<211> 12
<212> PRT
<213> Drosophila melanogaster

<400> 58

Met Thr Ala Glu Thr Leu Lys Pro Phe Ile Thr Pro
1 5 10

<210> 59
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 59

Leu Thr Ile Trp Gln Thr Thr Arg Val Ser His Leu Asp
1 5 10

<210> 60
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 60

Asp Lys Glu Leu Lys Ser Leu Lys Arg Val Val Asp Asn
1 5 10

<210> 61
<211> 13
<212> PRT
<213> Drosophila melanogaster

<400> 61

Ser Ser Asn Glu Ala Thr Ser Lys Glu Ser Pro Ala Pro
1 5 10

<210> 62
<211> 13
<212> PRT

<213> Drosophila melanogaster

<400> 62

Ala His Phe His Leu Ser Ser Arg Arg Arg His Gln Gly
1 5 10

<210> 63

<211> 13

<212> PRT

<213> Drosophila melanogaster

<400> 63

His Phe His Leu Ser Ser Arg Arg Arg His Gln Gly Ser
1 5 10

<210> 64

<211> 27

<212> PRT

<213> Drosophila melanogaster

<400> 64

Thr Arg Asp Gly Val Leu Thr Val Thr Asn Thr Gly Leu Tyr Tyr Val
1 5 10 15

Tyr Ala Gln Ile Cys Tyr Asn Asn Ser His Asp
20 25

<210> 65

<211> 8

<212> PRT

<213> bacteriophage T7

<400> 65

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5